HABITAT CONDITIONS

Channel Alterations

Lower Subbasin

Streams in the southeast portion of this subbasin has been completely channelized and leveed. Aquatic habitat problems include unstable streambed substrates, loss of deep water habitat, and lack of riparian corridor.

In the western and northern portions of the subbasin, no major channelization projects have occurred. Small channelization projects, gravel pushing, and poor gravel removal methods are widespread and relatively common. The detrimental effects of these activities on the stream health are significant, but localized. It is difficult to quantify the cumulative effects on the streams.

Instream gravel mining formed both the Hendrickson and the Keener Springs pools in the Black River (mining has since ceased). The expected bank failures upstream of these pools due to headcuts have not occurred. However, local residents indicate that the Keener Springs pool is rapidly filling in with gravel.

Upper Subbasin

No large channelization projects have occurred. As in the lower subbasin, small channelization projects, gravel pushing, and poor gravel removal methods are relatively common.

Stream Habitat Assessment

The MDC Stream Habitat Assessment Device (SHAD) was used to describe the quality of streambank, corridor, and channel habitat conditions in the basin. SHAD uses objective measurements and subjective ratings to rank particular habitat parameters into categories. Forty-five and 29 SHADs were conducted in the lower and upper subbasins, respectively.

Lower Subbasin

Excluding the Lowland ditches, the majority (62-92%) of the riparian corridors surveyed was classified as "good" (Table 17). Only 4% of the corridors on the ditches were rated "good".

Excluding the Lowland ditches, the riparian corridor averaged 60 -75 feet. Along the lowland ditches, the riparian corridor averaged only 11 feet.

Streambank erosion is not a major problem in this subbasin. Only 1% of the 8.5 miles of stream surveyed had severe erosion problems (Table 18). The streambank erosion problems which were noted, were all associated with missing riparian corridors. Severe bank erosion is not occurring on the lowland ditches because of soil composition and low stream gradients (~1ft/mile). However, instream woody habitat is completely missing from most ditches.

Upper Subbasin

Of the approximately 18 miles of riparian corridors surveyed, 50-100% were classified as "good" (Table 17). Only 0-12% of the riparian corridors were classified as "poor. The average riparian corridor range was 58-100 feet (Table 17). However, some streams that were not part of the survey, such as the North Fork of Webb Creek, Doe Run Creek, and Dickson Valley Creek have several miles of corridor that are nonexistent or consists of one row of trees.

While few severely eroding streambanks were noted (Table 18), many streambanks were classified as "moderately eroding". Many streams, such as the Black River, are experiencing moderate erosion even with an excellent riparian corridor. This erosion can be attributed to the excessive amounts of gravel bedload in the stream channel. Almost all SHAD surveys had comments regarding large amounts of unconsolidated gravel in the stream channel.

Improvement Projects

As in most river basins, there have been a variety of unsuccessful attempts by private landowners to stabilize streambanks. These attempts include channelization, hard points, bank armoring using a variety of materials including rock, gravel, car bodies, and construction debris. MDC personnel have not installed any improvement projects (*e.g.*, cedar tree revetments) in either subbasin.

Unique Habitats

The state's terrestrial natural resources have been classified into six major categories—Forest, Savanna, Prairie, Primary, Wetland, and Cave communities. These communities have been further divided based on characteristic features such as topography, size, distribution, and characteristic plants (Nelson 1987). The Missouri Department of Conservation's Natural Heritage Program (NHP) has identified 64 high-quality communities in the Black River basin (Table 19).

Lower Subbasin

Seventeen high-quality natural communities, representing Forest, Savanna, and Wetland categories, have been identified (Table 19). In the Forest category, Dry-Mesic Igneous Forest, Wet Bottomland Forest, and Wet-Mesic Bottomland Forest are present. The only high-quality Savanna community identified is a 60-acre igneous savanna. The Wetland category is represented by Deep Muck Fen, Forested Acid Seep, Forested Fen, Oxbows and Sloughs, Pond Shrub Swamp, and Swamp communities.

Upper Subbasin

The NHP has identified 47 high-quality natural communities (Table 19). This subbasin contains both upland and bottomland forest. The upland forest habitats include Dry-Mesic Forest, Mesic Limestone/Dolomite Forest, Dry Igneous Forest, Dry Mesic Igneous Forest, and Mesic Igneous Forest. The bottomland forest type is the Dry-Mesic Bottomland Forest. The Primary communities include the Dry Limestone/Dolomite Cliff, Dolomite Glade, and Igneous Glade.

Five Wetland community types (Acid Seep, Deep Muck Fen, Prairie Fen, Forested Fen, and Pond Shrub Swamp) are also present. There is only one Cave community type identified, the Effluent Cave.

Table 17. Riparian corridor conditions in the Black River basin as determined by SHAD surveys.

		Corridor Quality Ranking (%) ^a			Ave Width (ft)	
Stream	No. of SHADS	Total SHAD Length (feet)	Good	Fair	Poor	Forested Corridor
Lower Subbasin (data collected 1988- 1995)						
Black River Mainstream	13	16,904	75	14	11	75
Brushy Creek	5	2,585	92	8	0	72
Cane and Tenmile Creeks	10	9,814	62	35	3	70
West Flowing Streams b	4	1,517	72	28	0	60
Lowland Ditches ^c	13	13,900	4	17	79	11
Upper Subbasin (data collected in 1988)						
Black River Mainstream	5	15,922	100	0	0	100
West Fork Black River	7	15,874	93	0	7	78
Middle Fork Black River	3	3,989	100	0	0	98
East Fork Black River	1	497	50	38	12	58
Webb, Logan, & Sinking Creeks	7	5,580	95	4	1	94
Miscellaneous Streams d	6	5,556	94	3	3	93

^a - Good = dense stand of un-even aged trees and shrubs, Fair = moderately dense stand of un-even aged trees and shrubs or dense stand of mature trees with sparse understory, Poor = sparse trees and understory or heavily grazed grasses.

^b - Indian Creek, Greenwood Valley Creek, and McKenzie Creek

^c - East Ditch, Ditches 16 & 17, Lake Slough Ditch, Brosley Ditch, Menorkenut Cutoff, Menorkenut Slough, Cane Creek Ditch, & Main Ditch

^d - Bee Fork, Brushy Creek, Dry Valley Creek, Ottery Creek, & Strother Creek

Table 18. Streambank erosion ratings in the Black River basin as determined by SHAD surveys.

G.	Streambank Erosion Rating (%) ^a				
Stream	None	Moderate	Severe		
Lower Subbasin (data collected 1988-1995)					
Black River Mainstream	98	trace	1		
Brushy Creeks	99	0	1		
Cane and Tenmile Creeks	97	0	3		
West Flowing Streams b	100	0	0		
Lowland Ditches ^c	100	0	0		
Upper Subbasin (data collected in 1988)					
Black River Mainstream	8	92	0		
West Fork Black River	38	62	0		
Middle Fork Black River	70	30	0		
East Fork Black River	100	0	0		
Webb, Logan, and Sinking Creeks	76	17	7		
Miscellaneous Streams d	89	7	4		

 $^{^{\}rm a}$ - Streambank Erosion Rating: None = Streambank well vegetated and < $45^{\rm 0}$ slope, Moderate = streambank with little vegetation and $45-90^{\rm 0}$ slope, Severe = no streambank vegetation and bank nearly vertical.

^b - Indian Creek, Greenwood Valley Creek, and McKenzie Creek

^c - East Ditch, Ditches 16 & 17, Lake Slough Ditch, Brosley Ditch, Menorkenut Cutoff, Menorkenut Slough, Cane Creek Ditch, & Main Ditch

^d - Bee Fork, Brushy Creek, Dry Valley Creek, Ottery Creek, & Strother Creek

Table 19. High-quality natural communities in the Black River basin.

Community Name	Area Name ^a	Size (Acres)	Ownership ^a		
Lower Subbasin					
Deep Muck Fen	MTNF Poplar Bluff District	1	USFS		
Dry-Mesic Igneous Forest		80	Private		
Forested Acid Seep	Poplar Bluff CA	1	MDC		
Forested Acid Seep	MTNF Poplar Bluff District	38	USFS		
Forested Fen	MTNF Poplar Bluff	10	USFS		
Igneous Savanna		60	Private		
Oxbows and Sloughs	Sun Stephen J. CA	10	MDC		
Oxbows and Sloughs	Allred Lake NA	7	MDC		
Pond Shrub Swamp	MTNF Poplar Bluff District	1	USFS		
Pond Shrub Swamp		2	Private		
Swamp		8	Private		
Swamp		24	Private		
Swamp	Allred Lake NA	27	MDC		
Wet Bottomland Forest	Allred Lake NA	21	MDC		
Wet-Mesic Bottomland Forest	Allred Lake NA	21	MDC		
Wet-Mesic Bottomland Forest	Big Cane CA	920	MDC		
Wet-Mesic Bottomland Forest	Poplar Bluff CA	53	MDC		
Upper Subbasin					
Acid Seep	Taum Sauk Mountain SP	0.25	MDNR		
Acid Seep	Ketcherside Mountain CA	0.25	MDC		
Cave			Private		
Creeks & Small Rivers	Lesterville Access		MDC		
Deep Muck Fen		4	Private		
Deep Muck Fen		4	Private		
Deep Muck Fen		1	Private		
Deep Muck Fen	Clearwater CA	1	MDC		
Deep Muck Fen	Grasshopper Hollow NA	9	USFS		

Table 19 Continued

Table 19 Continued.					
Community Name	Area Name ^a	Size (Acres)	Ownership ^a		
Upper Subbasin					
Deep Muck Fen	Johnson's Shut-ins SP	1	MDNR		
Deep Muck Fen	MTNF- Salem District	1	USFS		
Deep Muck Fen		0.3	Private		
Dolomite Glade	Johnson's Shut-ins SP	13	MDNR		
Dry Igneous Cliff	Taum Sauk Mountain SP		MDNR		
Dry Igneous Forest	Johnson's Shut-ins SP	5,200	MDNR		
Dry Limestone/Dolomite Cliff (1)	MTNF- Salem District		USFS		
Dry Limestone/Dolomite Cliff (2)	MTNF- Salem District		USFS		
Dry-Mesic Forest	Bell Mountain WA	81	USFS		
Dry-Mesic Bottomland Forest	Taum Sauk Mountain SP	215	MDNR		
Dry-Mesic Igneous Forest	St. Francois Mountain NA	1,105	MDNR		
Fen	Grasshopper Hollow NA	2	USFS		
Fen	Husman Fen NA	1	Private		
Fen	MTNF-Salem District	0.1	USFS		
Flatwoods	Taum Sauk Mountain SP	15	MDC		
Forested Fen	Grasshopper Hollow NA	4	USFS		
Forested Fen	Johnson's Shut-ins NA	8	MDNR		
Forested Fen	MTNF-Salem District	3	USFS		
Gravel Wash	Taum Sauk Mountain SP	15	MDNR		
Headwater Streams	Taum Sauk Mountain SP		MDNR		
Igneous Glade	Bell Mountain WA	106	USFS		
Igneous Glade	Bell Mountain WA	7	USFS		
Igneous Glade	Bell Mountain WA	321	USFS		
Igneous Glade	Taum Sauk Mountain SP	130	MDNR		
Igneous Glade	Taum Sauk Mountain SP	184	MDNR		
Igneous Glade	Ketcherside Mountain CA	228	USFS		

Table 19 continued.

Community Name	Area Name ^a	Size (Acres)	Ownership ^a		
Upper Subbasin					
Mesic Igneous Forest	Taum Sauk Mountain SP	35	MDNR		
Mesic Limestone Forest	MTNF Potosi District	48	USFS		
Pond Shrub Swamp		1	Private		
Pond Shrub Swamp	Bowles Pond	1	Private		
Pond Shrub Swamp	Lily Pond NA	2	TNC		
Pond Shrub Swamp	Logan Creek CA	1	MDC		
Prairie Fen	Grasshopper Hollow NA	13	USFS		
Prairie Fen	MTNF-Salem District	5	USFS		
Prairie Fen	MTNF-Salem District	2	USFS		
Prairie Fen	MTNF-Salem District	1	USFS		
Prairie Fen	MTNF-Salem District	1	USFS		
Springs	MTNF-Salem District		USFS		

^a - CA= Conservation Area, MDNR= Missouri Department of Natural Resources, MDC= Missouri Department of Conservation, MTNF= Mark Twain National Forest, NA= Natural Area, SP= State Park, TNC= The Nature Conservancy, USFS= U.S. Forest Service, WA= Wilderness Area